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THE PLANT DISEASE REPORTER

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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AN APPRAISAL OF DOWNY MILDEW AS A FACTOR IN FIELD LOSSES OF BRIGHT TOBACCO IN VIRGINIA DURING THE 1943 SEASON

Wilbert A. Jenkins

In an earlier report from this Laboratory (Pl. Dis. Reptr. 27: 227, 1943) an estimate was given of the early season losses due to downy mildew. Ordinarily, this report would have sufficed, for our growers generally experience seasonal compensations following an unfavorable plant bed season. The peculiarities of the present season, from a meteorological standpoint, has tended to reflect a situation initiated while the crop was in the plant beds rather than to compensate for it; thereby affording an unusually favorable opportunity for correlations between the downy mildew epiphytotic of the early season and the later field losses in Virginia.

The tobacco crop in Virginia, with few exceptions, was transplanted to the field from 10 days to 2 weeks later than usual. On this basis, and for purposes of discussion, the crops which were transplanted to the field between May 10 and May 25, or earlier, are classed as late crops. Only those growers whose plants were not attacked by downy mildew prior to being set into the field or those who were successful in controlling the disease were able to get their crops into the field by May 25 and to secure a profitable stand for an early crop. Almost a third of the growers planted their fields after May 25, or else, because of moldy plants, were forced to continue replanting considerably beyond this date in order to secure a stand. Many growers were never able to secure a uniform stand. That moisture was not a limiting factor in securing good stands, in the usual sense, is evident from the weather records over most of the tobacco belt of Virginia. These indicate abundant to surplus precipitation throughout the bright tobacco area during the months of May and June.

Our attention was first focussed on the continuing effects of the downy mildew epiphytotic through the inability of numerous growers in the late crop category to secure profitable field stands. A majority of these growers were finally able to secure stands but their crops were difficult to manage due to the presence of different aged plants in the fields. As the late crops began to grow, common mosaic and sore shin injury became of major importance, there being more complaints from these troubles than at any time during the past several seasons.

Beginning early in July and continuing for varying periods in various areas of the tobacco belt, bright weather and high temperatures became rather general. Much of the mosaic affected crop was badly scorched and losses from sore shin were accentuated. In addition, the late crops were far from mature. With the continuing dry weather, which in many areas ultimately developed into serious drouth, the late crops began to fire up, and, being immature, could not be cured satisfactorily. Concurrently, an August brood of horn worms essentially ruined much late tobacco in most areas of the bright belt.

Almost without exception, those growers having early crops sustained negligible losses as compared with those having late crops. Losses suffered in the early crops were due principally to "quick ripening" of the crop which, in many cases, could not be handled by the available labor. On the other hand, losses suffered in the late crops ranged from 20% to 50%, particularly as regards quality of the crop. Several competent observers have surveyed the bright tobacco areas recently and it is their opinion that the bright tobacco growers in Virginia have sustained losses ranging from $50.00 to $150.00 per acre this season in their late crops; this loss being exclusive of the losses evident in certain localities from black shank and Granville wilt.

Most growers, being accustomed in the past to the benefit of seasonal compensations, are attributing their losses solely to the drouth and to damage from horn worms. It is the purpose of this report to call attention to the correlation existing between the losses sustained by the late crops and the downy mildew epiphytotic, which, after all, predisposed the planting of the late crops. At the same time an interesting parallel might be drawn between the unusual amount of common mosaic in the crop and the downy mildew epiphytotic. It is common knowledge, in general, that the percentage of mosaic transplants is positively correlated with the number of times the beds are "drawn over" for planting to the field. Many of our growers were forced to replant their crops several times, and almost without exception the percentage of mosaic transplants increased with each additional replanting. The early growing season, being rather wet for the most part, was not only conducive to the rapid spread of mosaic in the field but was also favorable for the development of sore shin; particularly since many weak and mechanically injured plants were set into the fields.

VIRGINIA AGRICULTURAL EXPERIMENT STATION

REPORTS ON DISEASES OF SOYBEANS

Bacterial pustule (Xanthomonas phaseoli var. sojense) or bacterial blight (Pseudomonas glycinea) are the only diseases reported as generally prevalent. Downy mildew (Peronospora manshurica) is reported in Ohio, Indiana, Illinois, and Oklahoma; mosaic (virus) in Connecticut, Ohio, Minnesota, and Kansas; frog-eye leaf spot caused by Cercospora daizu in southern Indiana and southwestern Ohio (apparently new records for both States); and Diaporthe sojae (presumably), Sclerotium bataticola, and Sclerotium rolfsii in Mississippi.

Reports are as follows:

CONNECTICUT: Mosaic was generally prevalent on edible soybeans at one location in Mansfield, with damage ranging from slight to severe. (Robert C. Cassell, Emergency Plant Disease Prevention Project, August 16)

OHIO: Observations were made, August 16 to 21, on the condition of soybean fields in southwestern Ohio between Columbus and Hamilton. The bacterial pustule disease was found in every field inspected. It ranged in intensity from a trace to severe damage on 1/3 of the leaves per plant. In most of the fields it was not yet serious, but with favorable weather conditions it has possibilities of doing extensive damage later in the season.

Downy mildew was present in a few of the fields without appreciable damage.

In each field inspected an occasional plant showing symptoms of mosaic was found. No field was observed with more than 1% of this disease.

Frog-eye was found in one field near Columbus. Fields beyond this to the southwest were free of this organism. (M. R. Harris, Emergency Plant Disease Prevention Project. August 21)

INDIANA AND ILLINOIS: In general soybeans observed between Lafayette and Terre Haute during the week ending August 7 were affected moderately to severely by bacterial blight. A number of fields were infected severely and considerable loss in yield is likely. One field 20 miles south of Lafayette was affected moderately with downy mildew. At this time no necrosis was evident. An occasional infection locus of frog-eye leaf spot was found in one field near Vincennes in southern Indiana. The diseased plants were only slightly affected. One field 9 miles north of Vincennes was severely damaged by hail. The lower leaves of the plants were infected moderately with Pseudomonas glycinea.

Bacterial blight and pustular leaf spot were present in all of the soybean fields examined in Tippecanoe County, Indiana (vicinity of Lafayette), August 10 and 11. Since the symptoms of these diseases may be very similar no particular effort was made to determine the relative prevalence of either. In fields that were planted apparently during June these 2 bacterial diseases occurred chiefly on the lower leaves. However, in many early-planted fields in which pods were being formed, approximately 60% of the leaves were infected. The scanty rainfall during the preceding 2 weeks is a probable explanation for the slight spread on upper leaves.

Downy mildew was present in approximately 1/3 of the fields examined, but had not caused serious injury although infection was abundant in some fields.

Soybeans observed August 19 and 21 between Lafayette, Indiana, and Urbana, Illinois, generally were infected moderately with pustular spot or bacterial blight, and slightly with downy mildew. (R. C. Baines, Emergency Plant Disease Prevention Project.)

MINNESOTA: Stands of soybeans observed August 5, from St. Paul to Brookings, South Dakota, were very variable. Fields in general were clean. A trace of mosaic was present in some; and bacterial blight, while present in most fields, was restricted to the oldest leaves and did not appear to be spreading. (Ian W. Tervet, Emergency Plant Disease Prevention Project).

KANSAS: Fourteen fields were examined in 9 northeastern counties, August 12 to 14. Bacterial pustule in variable amounts was found in all but one. In older fields the heavy infection was beginning to cause defoliation. This was the only disease encountered, except for a few plants with mosaic. (Stuart M. Pady, Emergency Plant Disease Prevention Project)

OKLAHOMA: Bacterial pustule and bacterial blight were present in all plantings observed. In a planting in the Arkansas River bottom in Okmulgee County they were common and severe and were causing serious defoliation. Downy mildew spots were observed on the lower leaves of a few plants in this same region. (Howard W. Larsh, August 13).

MISSISSIPPI: The most prevalent disease of soybeans observed in the northeastern, central, and Delta areas August 15 to 21 was bacterial pustule. It was found in every field examined and nearly all plants were attacked. Two fields on the Stoneville Experiment Station, of 15 and 20 acres respectively, of "Ralsoy" soybeans were examined. In the larger field 75 to 80% of the plants were dead. A fungus tentatively identified as Diaporthe sojae was found fruiting on the dead plants. Sclerotium bataticola was also present in the dead plants but was not found on plants that were still green. In the smaller field, 5 to 8% of the plants were killed. The fungi present were the same. Fields south of Stoneville showed areas with the same condition. Sclerotium rolfsii was present on dead plants throughout the area visited. Only a few plants were infected in any one field. (L. H. Person, Emergency Plant Disease Prevention Project)

OBSERVATIONS ON PEANUT DISEASES IN SOUTHEASTERN ALABAMA AND SOUTHWESTERN GEORGIA

G. M. Stone

Nearly 200 acres of peanuts comprising 10 locations in southeastern Alabama and southwestern Georgia -- the principal peanut sections of the two States -- were inspected for disease development during the week of August 9 to 14. All of the peanuts observed were of the Virginia Runner variety except one field which was of the Spanish type. (Practically all of the Spanish crop had been harvested).

In all fields examined leaf spot (Cercospora) was uniformly present. The degree of infection varied from 25 to 100% of the leaves affected with nearly complete defoliation in one field. The disease was noticeably less severe on younger crops and progressively more severe on older crops. Local pathologists report that leaf spot was unusually severe on the Spanish crop, owing to the unusually warm, humid weather during the growing season. The pathologists here and at Auburn report encouraging results in the control of leaf spot from the use of sulfur and copper dusts. Yield increases up to 300 pounds per acre were re-

ported.

Southern Blight (Sclerotium rolfsii) was reported to be rather severe on the Spanish crop in many locations. This disease was observed in six of the above locations but not in a severe form. Five per cent of the plants in one field were affected and many of the diseased plants were dead. Not more than 1% of plants in the other fields were affected.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

PROGRESS OF POTATO LATE BLIGHT*

The complete benefit of the destruction of potato dump piles in Aroostook County, Maine, may not be realized, since the reduced amount of late blight has led some growers to give only partial protection to their fields. In Massachusetts the disease so far is restricted to the upper Connecticut River Valley. In New York it is widespread and threatening. In Pennsylvania serious spread was beginning at the middle of August. The disease is potentially dangerous in the southern Red River Valley of Minnesota and North Dakota, but is less serious in the upper part of the Valley. In the commercial potato regions of northern Iowa fields on muck soils were generally and seriously affected at the middle of August, but upland fields were more mature and less affected.

The disease is reported as appearing in New Hampshire, Vermont, and Ohio.

The accompanying tabulation lists temperatures during the period in relation to their effect on the spread of late blight (compiled from the Weekly Weather and Crop Bulletin)

Temperatures in Relation to Late Blight Spread

Favorable (Up to 75° F.)	Unfavorable (Above 75° F.)	Change from Preceding week
Week ending August 17: (rainfall for this week is reported as rather extensive in most Northern States from New England and New York westward to the Great Plains; very little elsewhere		
New England; New York except in southeast		Increase
	Southeastern New York	Same
Southeastern New Jersey; northern and western Pennsylvania; eastern West Virginia	Northern New Jersey; southern Pennsylvania	Increase
	Western Virginia; southern Ohio	Same

* The first sentence of the late blight report on page 283 of the preceding issue should read "The Long Island crop is maturing without apparent loss . . ." etc., instead of "with apparent loss" as given.

Favorable (Up to 75° F.)	Unfavorable (Above 75° F.)	Change from Preceding week
Southeastern New Jersey; northern and western Pennsylvania; eastern West Virginia	Northern New Jersey; southern Pennsylvania	Increase
	Western Virginia; southern Ohio	Same
Northern Ohio		Some Increase
Northern Indiana		Decrease
Michigan, Wisconsin	Indiana except northern; Illinois	Increase
Minnesota		Decrease in east, same in west
	Southern Iowa	About same
Northern Iowa		Decrease in west and central, increase in east
Northern Nebraska; South Dakota	Southern Nebraska	Same
North Dakota		Same in east, decrease in north & west
Northern Colorado	Southern Colorado	Same

Week ending August 24: (very little rain except locally in the interior of the Northeast and in some relatively small areas in north-central sections)

New England	Varied
New York, New Jersey, Pennsylvania, West Virginia, Ohio, Indiana, Illinois, Michigan, Wisconsin, Iowa	Decrease
Minnesota	Increase

Favorable (Up to 75° F.)	Unfavorable (Above 75° F.)	Change from Preceding week
Northern and extreme eastern Nebraska		Decrease
	Southeastern and central Nebraska	Decrease in east; increase in west
Eastern South Dakota		About same
	Western South Dakota	Increase
North Dakota		Same in east; increase in rest
Northern Colorado		Decrease
	Southern Colorado	Same

Following are the reports received:

MAINE: Late blight was found in 2 fields in Portland and in 3 fields in Scarboro in the southwestern part of Maine. Prevalence was general and severity ranged from slight, to very severe in 2 of the fields. In some fields the top leaves were infected. In most cases the affected fields were Green Mountains. No infection was found on Sebagos.

Except for Aroostook County the only other area where late blight was seen was in Pittsfield. Here 2 fields were found in which the disease was just gaining a foothold.

In Aroostook County late blight was found in Littleton as the most southerly point. Two fields here were generally infected with moderate damage. Other places in this County where late blight was found were Bridgewater, Monticello, and Ft. Fairfield, in 2 fields in each place; and in 1 field each at Presque Isle, Caribou, Limestone, and Washburn. In most cases prevalence was general with damage ranging from very slight to only moderate. Late blight was found on Sebago and Chippewa as well as Green Mountain.

Incidence of late blight in Aroostook County this year is generally much less than it usually is at this time of the season. The dump-pile clean-up campaign is considered the most important factor in this reduced prevalence. Unfortunately, however, the small amount of disease so far this year has led some growers to neglect spraying or dusting. As a result the infection now developing may become unnecessarily severe and may also be the cause of considerable storage rot this winter. (R. C. Cassell, Emergency Plant Disease Prevention Project, August 22 to 28)

NEW HAMPSHIRE: On August 10, late blight was found in commercial potato fields at Lancaster and in Victory gardens at Berlin, Coos County. About a third of the 270 Victory garden plots showed partial to complete defoliation on Chippewa and Green Mountain varieties. (M. C. Richards, University of New Hampshire, August 18)

VERMONT: Late blight was found at Waterbury in one field, where prevalence was general and damage moderate to severe. Twenty-five percent of the lower leaves were killed, and infection was spreading to the upper leaves. No late blight was found at Randolph Center. (R. C. Cassell, Emergency Plant Disease Prevention Project, August 20)

MASSACHUSETTS: Late blight has been found only in Hampshire and Franklin Counties to date. Probably 1/2 to 3/4 of all fields in the upper Connecticut River Valley are generally infected. Damage is now ranging from slight to moderate. Abundant rains and cool cloudy weather are conducive to further development. No late blight was found in Hampden County. (R. C. Cassell, Emergency Plant Disease Prevention Project, August 14)

NEW YORK: (Reports from State College of Agriculture Weekly News Letter for dates indicated). Late blight has been definitely reported from 19 counties and probably occurs in others. Most of the reports indicate its presence as general but not severe. In some counties it can be found in nearly every field, even those being sprayed or dusted, but is not severe except in occasional spots. In some muck fields it has killed most of the foliage and this is true in some unprotected upland fields. (M. F. Barrus, August 23)

Monroe County -- August 16: No late blight has yet been seen. August 23: "Pattern" visiting of potato fields this week showed that late blight is present in practically every field that has not been sprayed or dusted. The infection is light and is confined to small areas on scattered leaves. The important thing is that it is there to spread when conditions permit. August 30: Late blight is much more abundant than a week ago. It is now showing up in treated fields. Should weather favor its development I do not see how we can escape a serious epidemic. Spraying and dusting is being much more generally practiced than was the case a few years ago. (Ralph G. Palmer)

Northeastern New York -- In Washington County practically no late blight was evident on August 18, and the county has been dry.

In the Lake Placid section of Essex County late blight is severe even in well-sprayed fields. The shortage of spraying and dusting machines is partly responsible for the severity of the disease.

In Franklin County and western Clinton County, late blight is serious and threatens destruction even in well-sprayed fields. Garden and other untreated plantings are in general all but dead with late blight. Growers remarked that August 20 was the first day they could spray throughout the day for 32 days because of heavy rains or showers. (County Agents Clarence Slack, Ray Bender, and C. W. Radway, and R. W. Leiby, August 30)

PENNSYLVANIA: Dr. O. D. Burke reports that late blight is beginning to develop seriously on potatoes in Crawford, Venango, Clarion, and Jefferson Counties in northwestern Pennsylvania; Potter County in the north-central part of the State; and Susquehanna, Monroe, and Lehigh Counties in the eastern part. (R. S. Kirby, Pennsylvania State College, August 16)

OHIO: Potatoes near Columbus show the beginning of late blight infection. (M. R. Harris, Emergency Plant Disease Prevention Project. August 21)

MINNESOTA AND NORTH DAKOTA: (August 11) Late blight was found in one field near Moorhead, Minnesota. This field of Red Warbas is situated near a river and is partly encircled by trees, so that humidity would tend to remain high. Abundant sporulation was observed on infected leaves. Late blight was not found in other fields in the same general region on August 11, even though potato dumps had been adjacent to some of the fields. However, the weather was favorable for late blight, and continuation of similar conditions for a few days undoubtedly would lead to a more general appearance of the disease in Clay County. Between Moorhead and Fergus Falls, a few large fields were examined rather hurriedly, and blight was observed in only one, just north of Fergus Falls. The disease was generally distributed in low places in this field, and probably will result in much tuber rot, since heavy rains had exposed part of many tubers.

(August 16 to 22 -- St. Paul to Fargo, west to Jamestown, Carrington, Minot, Sanish, Watford City, Williston; north to Crosby; east along the northern part of North Dakota to Rolla; south to Larimore, Hillsboro, Fargo; St. Paul) In Harvey (central North Dakota), a trace of late blight was found in one field, but there were no indications that the disease was spreading or would cause damage to that field under the prevailing weather conditions. In the Red River Valley between Larimore and Fargo only one field was seen in which late blight was evident. It is, however, very probable that the disease could spread rapidly in this region. In Minnesota from Moorhead to St. Cloud several fields were heavily infected; in some the vines were completely destroyed. These fields 2 weeks ago were attacked slightly but the favorable conditions of the past 2 weeks have permitted a very rapid spread in these particular fields. The late blight situation in the southern part of the Red River Valley is potentially dangerous, thorough preventive spraying being advisable at this time.

(August 26 to 29 -- St. Paul to Grand Forks, North Dakota, thence through the northern part of the Red River Valley, returning to St. Paul via Bemidji and Grand Rapids, Minnesota) Late blight is generally distributed in the upper Red River Valley, but light infection is the rule. In the Park River section of North Dakota, no fresh lesions were seen, although it was evident that an early infection had occurred and been stopped. Sporulating lesions were found in many fields in the Grafton, Grand Forks, and Hillsboro areas, but in no case was there severe infection. In the upper Red River Valley, late

blight does not appear to be a serious problem in regard to production of the crop, but because of the general distribution of the fungus, tuber infection may be common if care is not excercised at digging. Late blight is more severe eastwards from Grand Forks, heavier infections occurring at Grand Rapids, Minnesota and vicinity. (Ian W. Tervet, Emergency Plant Disease Prevention Project)

IOWA: On August 16, 17, and 18, a tour was made of the commercial potato regions of northern Iowa. Fields in Hancock, Cerro Gordo, Winnebago, Worth, Emmett, Clay, Buena Vista, and Pocahontas Counties were visited. Late blight, in epiphytotic proportions, was prevalent on the muck soil potatoes in this area. In some fields the vines were prematurely dead. On the basis of earlier surveys made by the State plant pathologists, this premature death of vines may be accounted for, at least in part, by late blight infection. Such fields, upon random selection and examination of hills, showed that of the tubers set an estimated 25 to 40% were of marketable size. The fields in which the vines were still green or partially green showed practically all plants with late blight. The degree of infection was variable, an estimated 10 to 75% of the foliage being affected. In practically all instances, profuse spore production was evident. Random selection and examination of hills in these fields with vines still green showed that of the tubers set an estimated 50 to 75% were of marketable size.

Fields of so-called "upland" potatoes were, in general, more advanced in maturity. Late blight appeared to be of minor importance, although its presence was detected in a number of fields to a limited extent. (T. W. Bretz, Emergency Plant Disease Prevention Project).

ROOT ROT OF AROIDS

W. B. Tisdale

In the fall of 1940 growers of Chinese Evergreen (Aglaonema simplex Blume) in Orange County reported that a disease was causing considerable reduction in yield of marketable plants. An inspection of the nurseries at that time revealed that the plants were affected with root rot, and that the diseased plants occurred in areas of various shapes and sizes on the beds. Greatest numbers of diseased plants occurred on the beds that had been used longest for successive crops of Chinese Evergreen. Since the first observation was made, the soil has become more uniformly infested and one grower reported a 60% loss of cuttings planted in the fall of 1942. The disease is active the year round, but growers have reported that it develops most rapidly during the spring and autumn.

In its early stages, affected plants show no symptoms of disease in the parts above ground, but plants that have most of the root system destroyed may be recognized by their small size and drooped leaves which gradually turn yellow and finally brown. Unrooted tip cuttings

planted in infested soil may never establish a root system because the rootlets are attacked as soon as they arise. Stems of some cuttings rot off up to the soil surface and the plants fall over, but there is usually little further advance of decay. On the roots early stages of the disease are recognized as light brown more or less watersoaked lesions, varying in length from one to several millimeters. Observations made so far indicate that the primary lesions occur most frequently on or near the root tips. On drying out the diseased tissue turns brown and becomes very fragile so that most of the affected roots remain in the soil when plants are pulled up.

Similar disease symptoms were observed on Dieffenbachia picta Schott, Nephthytis afzelii Schott, Philodendron cordatum Kunth, and Scindapsus aureus Engler growing in pots or in deep soil under the sheds. None of these plants appeared to be as seriously affected as the Chinese Evergreen.

Several fungi were readily obtained in culture from diseased tissue but none of them produced any disease symptoms in inoculation experiments. Finally a fungus was isolated on corn meal agar which appears to be a species of Pythium. Cultures of this fungus have produced a root rot typical of that developing under nursery conditions. Rooted cuttings planted in soil inoculated with pure cultures of the Pythium showed root lesions within 10 days, and most of the root system was destroyed within 40 days. The same organism has been isolated from diseased roots of all the Aroids named above and infection has been obtained by planting healthy rooted plants in soil inoculated with the organism. A preliminary test has shown that the organism can be eradicated from the soil with formaldehyde solution.

FLORIDA AGRICULTURAL EXPERIMENT STATION

PLANT DISEASES IN MINNESOTA AND THE DAKOTAS

Ian W. Tervet

Summary of Disease Situation in Minnesota and South Dakota (August 12): Since most of the small grains and flax were ripe prior to my starting on the Federal Emergency Plant Disease Prevention Project, this summary is compiled partly from my own observations while still attached to the University of Minnesota and partly from information supplied by other investigators at the Minnesota Agricultural Experiment Station.

Wheat -- Little loss resulted from stem rust (Puccinia graminis) or leaf rust (P. rubigo-vera tritici). However, Rival wheat was attacked slightly by stem rust, almost all fields examined having some. Scab was very heavy on spring wheats, Rival being injured almost as markedly as Thatcher in the corn growing regions.

Barley -- Principal loss resulted from poor stands and from fusarial head blight, over most of Minnesota and eastern South Dakota. However, the 2-rowed Spartan barley in southeastern South Dakota was free from scab, the fields that were examined on August 6 and 7 showing no head discoloration or evidence of disease.

Oats -- The crop generally appears to be light, the loss from disease being due principally to the rusts.

Flax -- Pasmo and rust have been the major disease hazards in flax this year, with pasmo widely prevalent and doing much damage. It appears very probable that cultural practices recommended to farmers may be responsible for the maintenance and wide distribution of these diseases. It is almost useless to advise farmers to obtain good quality flax seed that is thoroughly cleaned to remove chaff, straw, etc., harboring plant pathogenic fungi so long as other sources of inoculum commonly exist. The practice of using flax as a nurse crop for alfalfa, etc., appears to be unsound if disease on flax is to be minimised. Such alfalfa fields retain flax stubble at least until the spring following the removal of the flax crop and can therefore be expected to furnish inoculum of pasmo and of rust in quantity early in the growing season. While no attempt should be made to discourage the thorough cleaning of flax seed, consideration must be given to other sources of inoculum if relatively disease-free flax is to be produced.

The relation of weeds to the incidence of disease in flax apparently also is important, since observations this season have shown generally that fields relatively free from weeds in general were less severely injured by pasmo and rust.

Sorghum and Sudangrass -- Bacterial spot (Pseudomonas holci) is present in all sorghum and sudangrass fields examined in South Dakota and Minnesota. Occasional fields of sudangrass may suffer some injury from this disease, but sorghum generally is not heavily infected. Bacterial stripe (Ps. andropogoni) was found in most sudangrass fields in the Missouri Valley from Wheeler to Yankton. The practice of surrounding sorghum fields with a border of sudangrass may lead to an increase of bacterial stripe on sorghum, since this disease was found most abundant in those sorghum fields thus bordered. It seemed probable that the bacterial stripe disease was spreading from sudangrass to the sorghum.

Plant Disease Survey in Eastern South Dakota (August 6 to 9):
August 6, Brookings to Highmore on U. S. 14:

Flax -- Three uncut fields were observed, 2 of them ripe, the third very irregular from full flower to ripe, the variety probably Redwing. Rust was light on ripe plants, having done little damage. On late plants rust was generally present. Pasmo was 100% prevalent at Lake Preston, but only a trace in severity. Pasmo was not found in a partly ripe field at Cavour.

Corn -- Good fields of corn were observed west from Brookings to the neighborhood of DeSmet. From DeSmet to the vicinity of Cavour hail damage was severe in most fields. From Huron west to Highmore, grasshoppers and drought were doing much damage.

Sorghum -- In fields near St. Lawrence 100% of the plants were affected by bacterial stripe. Most of the leaves showed light to moderate infection.

August 6, Highmore to Chamberlain on State Highway 47:

Barley -- Spartan barley was the only variety seen, and all fields were fully ripe although a few were uncut or only partly cut. In most fields the plants were very clean, a trace of stem rust being found in one field only.

Wheat -- Two uncut but fully ripe fields of spring wheat (Ceres) were found, one 10 miles south of Highmore, the second 1 mile east of Stephan. Both fields were generally infected with stem rust, and the grain was somewhat shrunken in severely infected plants. Stem rust was 100% prevalent, with severity ranging from 1 to 35%, the average being about 5%.

August 7, Chamberlain to Vermillion (via U. S. 16 to beyond Kimball, thence by U. S. 281 to Wheeler, U. S. 18 to junction with State Highway 50, through Wagner, Tyndall, Yankton, to Vermillion):

Wheat -- Only one field was seen, probably of variety Ceres. Most of the field was cut except for a wide margin at the roadside. No rust was observed on the uncut grain or in bundles in shock.

Sorghum -- Bacterial spot and stripe were common, and only in a field near Ravinia was infection sufficiently heavy to do appreciable damage.

Barley -- One field of 6-rowed barley, mainly smooth-awned but with some mixture of rough-awned, was seen near Platte. No disease was seen. In several fields of Spartan examined, the plants were clean.

Corn -- No disease was seen. Only in the neighborhood of Yankton and east to Vermillion is there prospects for a crop. The most striking feature of the survey was the severe drought extending from somewhat west of Huron to Highmore and thence south and east as far as Tabor, a few miles west of Yankton. Over that area corn is drying up rapidly and the prospects for a crop are slim, many fields being severely injured now, while others will not make a crop without additional rain.

In this territory, sorghum fields also are being damaged by heat and drought, and even weeds in cultivated fields are wilting!

August 8, Vermillion to Brookings:

Sorghum and Sudangrass -- Bacterial spot was present on both crops but much heavier on sudangrass. On sorghum infection varied from a trace to light, little loss of leaves being observed. In many sudangrass fields, lower leaves were lightly to moderately infected. Bacterial stripe was not seen in this section. Sudangrass was mainly flowering, while only scattered plants in sorghum fields were showing heads.

Flax (blue-flowered) -- In fields near Dell Rapids and Colman, pasmo was prevalent, plants being heavily attacked. Rust was not observed on stems or peduncles. There was some reduction in yield from pasmo, difficult to estimate accurately as the fields were fully ripe. However, not less than 10% and possibly as high as 25% reduction occurred in the fields examined.

Sorghum and Corn -- There was no indication of loss from disease.
Red Clover -- One field south of Sioux Falls had a poor stand and most of the plants were infected with northern anthracnose (Kabatiella caulivora).

August 9, Brookings to Sisseton and vicinity:

Flax -- In Deuel County many fields of blue-flowered flaxes were seen, almost all of them being fully ripe, some were being cut and in others harvest was just beginning. Rust and pasmo are very prevalent and all fields are very weedy. Pasmo generally has done damage, with much premature ripening and loss of seed balls through breaking of pedicels, or else production of seed balls with undeveloped seed. The estimated loss from pasmo will range from 5 to 30%. Rust was mainly observed on the pedicels, many telia being found there with the loss equal to that from pasmo in many fields. Few leaves remained on the plants and the stems were not heavily infected with rust. The combined loss from rust and pasmo in one field was estimated at 50%, but the average for this area might be approximately 15 to 20%. The estimate of flax yield by the county agent in the area surrounding Clear Lake is 10 bushels per acre, but it is possible that this figure is somewhat high, an average of about 9 being my guess.

In fields near Watertown flax was much cleaner, pasmo and rust being less severe. In some fields there was little loss from these diseases. Two fields much less weedy than the average for this area were also relatively free from disease, the stems being still green and not brown from pasmo while the pedicels were affected only slightly by rust.

Between Watertown, Hurricane Lake, and Sisseton rust and pasmo were less severe than in Deuel County, and most fields had not suffered much loss from rust infection in the pedicels. However, occasional fields were heavily infected.

Potatoes -- In the vicinity of Clear Lake and Watertown there was no late blight but some Alternaria blight was observed.

Wheat -- Only durum wheat was uncut. Between Watertown and Sisseton, durum wheat showed none to 10% severity of stem rust.

Survey in Minnesota and North Dakota (August 16 to 22)

The itinerary was from St. Paul, Minnesota, to Fargo, North Dakota, through to Jamestown, to Carrington, to Minot; from Minot to Sanish, through Watford City to Williston; from Williston north to Crosby and then east along the northern part of North Dakota to Rolla; then south through Larimore, Hillsboro, then to Fargo; returning to St. Paul August 22.

Flax -- One of the principal aims of this trip was to survey the flax section in North Dakota in regard to the distribution and severity of pasmo and of rust. Pasmo is most severe in the Red River Valley, relatively slight infection being found in the more western parts of the State excepting the irrigated lands on the Missouri River near Williston. However, isolated fields, especially of Walsh and yellow-seeded flaxes, were heavily attacked by pasmo throughout the State. It is quite evident that the most serious injury from pasmo has occurred in

the neighborhood of Brookings, South Dakota, northwards to Fargo, North Dakota; from there stretching eastwards to about Olivia and Tracy, in southwestern Minnesota. In other sections pasmo occasionally has caused severe damage but most fields are attacked only slightly. Rust on flax has caused some damage generally throughout North Dakota but the injury will not be of great importance. However, very late fields of Bison flax especially in the northwestern section of North Dakota, that is in the Williston-Crosby section, will suffer very severe damage from flax rust, for the fields were at flowering during the third week in August and would not mature for some weeks hence.

Potatoes -- See under late blight.

Small Grains -- The very excellent crop of wheat and other small grains in the western part of North Dakota is probably the most striking feature of this trip, yields of spring wheat being up to 35 bushels per acre with frequent 62-pound grain. All the small grains were being cut and seemed very free from disease. In no case did I find stem rust or leaf rust in the Sanish-Williston area. From Crosby east a few fields of very late oats were severely attacked by both stem and crown rust and damage to these fields unquestionably will result; however, these late oats constitute a very small fraction of the total oat acreage in North Dakota.

Beans -- One field of snap beans, apparently being grown for seed, was seen near Carrington, in which all the plants were very severely infected with bacterial blight [presumably Xanthomonas phaseoli].

EMERGENCY PLANT DISEASE PREVENTION PROJECT

PLANT DISEASE SURVEYS IN NEW ENGLAND

Robert C. Cassell

Massachusetts (August 5 to 7):

From the Connecticut River Valley within 25 miles north and west of Amherst (Hampshire and Franklin Counties):

Tobacco -- Mosaic was light in amount. Sore shin (Rhizoctonia solani) was also light, but generally prevalent. One field visited will have at least 35 to 40% of plant infection with probably a 25% loss.

Vegetable Crops -- Diseases of potatoes and tomatoes observed during this survey were reported in a preceding issue. On cucumbers the following diseases were observed: anthracnose (Colletotrichum lagenarium), light to moderate infection depending upon the field; angular leaf spot (Pseudomonas lachrymans), light to moderate; scab (Cladosporium cucumerinum), light to heavy; mosaic (virus), light to heavy infection, both yield and quality being cut appreciably in some fields. On carrot light to moderate amounts of Alternaria leaf blight (A. carotae) and a light but generally scattered infection with aster yellows (virus) were observed.

Central and Northern Worcester County:

Beans -- Bacterial halo blight (Pseudomonas medicaginis var. phaseolicola), although moderate in amount, was much more prevalent this year than usual.

Apple -- A moderate but general infection of scab (Venturia inaequalis) was observed in 2 orchards visited.

Massachusetts (August 8 to 14)

Potato -- Early blight (Alternaria solani) was noted in one field at Sunderland, Franklin County, and in one field at West Springfield, Hampden County. In the Sunderland field it will probably account for a 15% reduction in yield as it was very severe. A general but slight sprinkling of Fusarium wilt was observed in one field in Granville, Hampden County. For late blight see with other reports under late blight.

Tomato -- Early blight (Alternaria solani) was rather generally distributed especially on poorly-cared for tomatoes. The Comet variety appeared to be generally infected but only slightly damaged. Severe damage was noted on other varieties in Worcester, Bristol, and Hampden Counties. In West Springfield, Hampden County, 30 to 35% reduction in yield was anticipated in one case. Septoria blight (Septoria lycopersici) was generally prevalent but causing slight damage in one field at West Springfield. Leaf mold (Cladosporium fulvum) was also observed in one field at West Springfield, causing local, moderate damage.

Beans -- Bacterial halo blight was found in Hampden, Bristol, Worcester, and Franklin Counties. Prevalence was general in all fields in which it was observed and damage to leaves ranged from slight to severe. The disease was found on green, shell, Lima, and pole beans. Common bacterial blight (Xanthomonas phaseoli) was general and causing moderate damage in one field at Rehoboth, Bristol County. Local infections of rust (Uromyces phaseoli var. typica), with very slight damage, were observed in one field.

Cantaloup -- Bacterial wilt (Erwinia tracheiphila) was general but causing slight damage in the 2 fields in which it was found, one in Bristol County and the other in Franklin County. Other diseases observed were scab, which was locally prevalent and causing slight damage in an irrigated field at Seekonk, Bristol County; and Septoria leaf spot (S. cucurbitacearum), causing slight to moderate damage in one field at Orange, Franklin County.

Cucumber -- Angular leaf spot was observed in Franklin, Hampden, and Bristol Counties. Prevalence in fields ranged from local to general, but only under overhead irrigation in Bristol County was the disease actually severe. A slight but general infection of bacterial wilt was noted in one field at Concord, Middlesex County. Leaf spot caused by the anthracnose fungus was observed in Dighton, Bristol County, and Sunderland, Franklin County. At Dighton the disease was severe where it occurred owing to overhead irrigation. Scab was found in Hampden, Bristol, and Franklin Counties, usually general in prevalence and causing slight to moderate damage. Mosaic (virus) seems to be most severe in the upper Connecticut River Valley. Two fields near Sunderland,

Franklin County, were generally affected with damage ranging from slight to moderate.

Squash -- Angular leaf spot was causing slight damage in one field at West Springfield, Hampden County. Bacterial wilt was just beginning to appear in spots in 2 fields at Concord, Middlesex County. Scab was local to general, mostly on leaves and causing only very slight to slight damage, in Franklin, Bristol, and Middlesex Counties. Powdery mildew (Erysiphe cichoracearum) was causing moderate to severe damage to the foliage under irrigated conditions in Bristol County at Dighton and Seekonk. Septoria leaf spot was generally distributed and causing moderate damage in the only field in which it was observed, at Sunderland, in Franklin County.

Cabbage -- One field at Chicopee Falls, Hampden County, suffered 90% loss from black rot (Xanthomonas campestris). Yellows (Fusarium conglutinans) will probably cause 25% loss in a field at Chicopee Falls. Club root (Plasmodiophora brassicae) was causing slight damage in Hampden and Franklin Counties.

Celery -- Early blight (Cercospora apii) seems to be rather common in unsprayed plantings. It was observed in Middlesex, Bristol, Hampden, and Franklin Counties. In one field at Concord it was estimated that there would be very little reduction in yield but 10% reduction in quality. Late blight (Septoria apii) was observed in celery grown under overhead irrigation in Bristol County. The reduction in yield will probably be 5%.

Other Vegetable Crops -- No asparagus rust (Puccinia asparagi) has been found in Massachusetts as yet this year. Last year it was reported as unusually severe. Cercospora leaf spot (C. carotae) will cause probably 10% reduction in yield in one field of carrots at Sunderland, Franklin County. A field of lettuce at Concord, Middlesex County, will suffer 10% loss from aster yellows. Onion smut (Urocystis cepulae) was causing probably 30% reduction in yield in one field of white pickle onions at Deerfield, Franklin County. Moderate to severe damage from Cercospora leaf spot (C. pastinacae) was observed in one field of parsnips at West Springfield, Hampden County. Blossom-end rot (non-parasitic) of peppers was general but slight in one case observed at Dighton, Bristol County.

Sweet Corn -- Smut (Ustilago maydis) seems to be well distributed over Massachusetts this year and is worse than usual. The disease is general in most fields and the damage ranges from slight to severe. Dr. C. C. Boyd, from actual counts, estimated 20% reduction of yield in one field.

Apple -- Severe infection by scab seems to be prevalent throughout the State. Severity in individual orchards apparently depends almost entirely on the spray program followed. Leaf infections are general and fruit infections range from very slight to moderate. The county agent of Hampden County estimated that 30% of the McIntosh crop of that county would be thrown out of the U. S. Fancy grade because of scab. Bitter rot (Glomerella cingulata) was local but causing severe damage in one orchard at Seekonk, Bristol County. One tree was removed because of this disease. Apple rust (Gymnosporangium juniperi-virginianae) was observed on only the Twenty Ounce variety in an orchard at Granville, Hampden County. Damage to the leaves was severe, but the fruits were

almost clean.

Strawberry -- A root rot of undetermined cause was general but caused slight damage in one field at Rehoboth, Bristol County.

Maple -- Verticillium wilt (V. albo-atrum) of sugar maples seems to be well distributed and destructive this year.

Effect of Weather -- At least until August 11 Bristol County was suffering from lack of moisture. Wherever possible, crops were being irrigated; hence local outbreaks of diseases in this region. Otherwise, with the possible exception of the northeastern part of the State which I have not visited, Massachusetts has had plenty of rain. The abundance of rainfall and cloudy cool weather coupled with erratic spraying by some growers accounts for the unusual prevalence of plant diseases in the upper Connecticut Valley.

Vermont (August 15 to 21).

Potato -- For late blight see with other late blight reports.

Beans (garden) -- Anthracnose (Colletotrichum lindemuthianum) was general but causing only slight damage at Waterbury.

Oats -- Crown rust (Puccinia coronata) was found at Williston, Waterbury, and Richmond. Prevalence was general, and damage ranged from moderate at Richmond to very severe at Williston and Waterbury. There will doubtless be a heavy reduction in yield at Waterbury. At Williston shrivelling of the grain could already be detected; the leaves and sheaths were well covered, and the rust was present in the head. Stem rust (P. graminis avenae) was general at Richmond and Brookfield. Damage was slight to moderate at Richmond and very severe at Brookfield. The presence of Berberis vulgaris nearby was reported at Brookfield.

New Hampshire (August 15 to 21).

Vegetable Crops -- Potato early blight was general and causing slight to moderate damage at Exeter and Grafton. No late blight was found. A slight amount of leaf roll was observed at Exeter. Tipburn was severe at Grafton but less so at Exeter.

Early blight was general on tomatoes at 2 locations at Hampton but was causing only slight damage, infection being limited to the lower leaves.

Bacterial halo blight and anthracnose were observed on garden beans at Hampton, each in one field, causing slight damage.

One squash field with very slight damage from anasa wilt (insect) was seen. (See also squash fruit rot, page336)

Apple -- Scab was general in 3 orchards examined at Hampton. Damage ranged from very slight to severe depending upon the care given the trees. The fruits were practically free from infection in all cases. Very scattered pin-point infection spots of apple rust were present in 2 Hampton orchards. Pycnidia were visible but there was no development of aecia. Frog-eye leaf spot (Physalospora obtusa) occurred generally with very slight damage in 2 Hampton orchards.

Raspberry -- Anthracnose (Elsinoë veneta) was causing slight to moderate damage at one location at Durham.

Red Clover -- Leaf spot (Pseudopeziza trifolii) was generally prevalent with moderate to severe damage at one location in Hampton.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

PLANT DISEASES IN NEW YORK AND PENNSYLVANIA

L. J. Tyler

Pennsylvania (August 10 to 14).

Collaborators: Drs. R. S. Kirby, C. D. Burke, L. O. Weaver of Pennsylvania State College, and county agents Ira Yoder of Middleburg, P. G. Niesley, Bloomsburg, Stanley Hummer, Bloomsburg, and Mr. Landenburg, of Scranton.

Beginning Tuesday, August 10, a disease survey was made in the following central and northeastern Pennsylvania counties: Snyder, Northumberland, Columbia, Luzerne, Lackawanna, Wyoming, and Susquehanna. Agricultural pursuits and crops grown in these counties are well diversified but considerable emphasis is placed upon growing vegetable crops. Many of the different kinds of vegetables grown are produced commercially. Large and small fruits also are produced on a commercial scale. Cereals and forage crops are mostly grown for local livestock consumption in this area.

The following narrative report is divided on the basis of observations in each county visited.

Snyder County (visited August 10)

Tomato -- In the vicinity of Middleburg, where a tomato canning industry is developing, early blight was very prevalent. Almost all plants and all leaves exhibited one or more lesions. At Selinsgrove, early blight was prevalent in fields visited but only 15 to 30% of the leaves bore lesions and these were on lower leaves.

Beans -- Victory garden beans (Lima and Soy in one garden) in the vicinity of Troxelville, were severely diseased with Alternaria leaf spot (probably Alternaria atrans, although not definitely known).

Potatoes -- Early blight was prevalent in the vicinity of Selinsgrove, but had not gained epiphytotic proportions. Apparently thorough spray practices had done much to check the disease. Late blight has not been seen in this county up to the present.

Apple -- Near Troxelville, apple black rot was severe in unsprayed trees but near Selinsgrove, in sprayed trees only a trace was noted. Sooty blotch (Gloeodes pomigena) was severe near Troxelville, in unsprayed trees but was not seen in sprayed trees. Apple scab was severe in unsprayed trees but there was very little in sprayed orchards. Apple rust was noted in one sprayed orchard to the extent of but a trace.

Peaches -- Scab (Cladosporium carpophilum) and brown rot (Monilinia fructicola) were rather general with brown rot severe in unsprayed trees. It can be noted here that in a commercial peach orchard about 1/2 mile north of Jersey Shore, which apparently had not been sprayed this year, the fruit crop was a total loss due to brown rot.

Raspberry -- Anthracnose, spur blight (Didymella applanata), and crown gall (Agrobacterium tumefaciens) were severe in a commercial planting near Troxelville. Crown gall apparently was the more destructive of the three. The grower stated that "the nursery stock came from Michigan". Black rot of grapes (Guignardia bidwelli) was very destructive in the vines of this same grower who apparently had not followed disease control practices recommended by the State extension pathologists.

Columbia County (visited August 11)

Commercial plantings -- A farm in the vicinity of Bloomsburg, was visited. Tomato leaf mold was severe on greenhouse plants but the crop was mostly harvested. Field celery was severely diseased by Septoria apii; large numbers of lesions were present on all plants and leaves. Even though dusted weekly with 20-80 copper-lime dust the grower had been unable to hold the disease in check.

Septoria blight of tomatoes was prevalent in the Bloomsburg area. All plants carefully examined exhibited lesions on up to 25% of leaves. Alternaria blight also was prevalent but less so than the former.

Ford Hook celery was destructively affected by what appeared to be Fusarium yellows (F. apii). The same plants were very severely infected by Septoria apii.

Alternaria leaf spot of eggplant and mosaic of pepper were prevalent but not particularly destructive in commercial plantings.

Victory garden plantings -- In the vicinity of Bloomsburg, the common bacterial blight was very destructive on snap, field, and lima beans. Halo-blight was present but to a much lesser extent. Bean anthracnose and the yellow mosaic diseases were noted frequently in snap beans; anthracnose lesions could easily be found on the pods. They were especially prevalent on plants which were crowded.

Other diseases noted in this same victory garden area are, *Alternaria spot of cabbage, carrot leaf blight (both Cercospora and Alternaria present in lesions), bacterial wilt of cucumbers and melons, and the Septoria and Alternaria blights of tomato. The latter diseases were not particularly destructive up to present but may become so on plants of late grown vegetables.

Luzerne County (visited August 12, mostly commercial plantings)

On a farm in the vicinity of Wilkes-Barre, spur blight and anthracnose lesions were present on 30% of raspberry canes but not in large numbers. Plum leaf spot (Coccomyces prunophorae) was very destructive on all trees examined. Also, a disease of prune characterized by oozing, discolored areas on the fruit, necrotic underneath the peel, was prevalent in all trees of this orchard. This disease has been called "heat canker" and "drought spot", and has been attributed to various factors. (See papers by F. C. Stewart, B. J. Dippenaar, E. L. Proebsting, et. al.)

[* -- Note: Presumably the black leaf spot caused by Alternaria circinans (Berk. & Curt.) Bolle. Following Bolle, this name is being used for the fungus formerly known as A. brassicae (Berk.) Sacc. According to Bolle the name A. brassicae belongs to the gray leaf spot fungus and A. herculea is reduced to synonymy. Pertinent synonymy of the 2 species is as follows:

Black leaf spot fungus, Alternaria circinans (Berk. & Curt.) Bolle
(A. brassicae Sacc., not (Berk.) Bolle)

Gray leaf spot fungus, Alternaria brassicae (Berk.) Bolle (not Sacc.)
(Macrosporium brassicae Berk.)
(M. herculeum Ell. & M.)
(Alternaria brassicae var. macrospora Sacc.)]

Virus yellows of celery was noted among plants of one grower near Wilkes-Barre. About 3% of the plants exhibited similar symptoms.

On a farm near West Pittston, the following crops and diseases were noted: on peppers anthracnose (Gloeosporium spp?) and sun-scald followed by Alternaria were very destructive causing a loss of at least 25% of the crop; Verticillium or Fusarium wilt (checking by tissue culture) occurred in an occasional plant; leaf spot (Cercospora capsici) was very prevalent but not destructive; tomato mosaic on pepper and spotted wilt (virus) were also noted with spotted wilt quite prevalent. On tomatoes Septoria, and Alternaria leaf blights were present in almost all plants but lesions of each were few and on lower leaves; cucumber mosaic of tomatoes was noted occurring in an occasional plant. On squash, Rhizopus fruit rot was very destructive, and an occasional plant exhibited mosaic. On egg plant, Verticillium wilt (V. alboatrum) was very prevalent; and Phomopsis blight of the leaves (Phomopsis vexans) was noted on many plants but was not found on the fruits. On beans (snap and lima) common bacterial blight on both and yellow mosaic on the snap bean were noted throughout field but had not become particularly destructive. On cucumber bacterial wilt was very prevalent. On cabbage club root was noted on occasional plant. On broccoli black leg (Phoma lingam) and Alternaria leaf spot (A. brassicae) [probably A. circinans] were noted; only an occasional plant was found to have black leg, but the leaf spot was common on the older leaves.

Lackawanna county (visited August 13)

Potato -- Accompanying Drs. O. D. Burke and L. O. Weaver the day was spent visiting commercial fields of potatoes. In the fields of growers cooperating closely with Pennsylvania extension pathologists, potato diseases were scarce, but in fields of others where seed source was disregarded potato diseases were numerous. In fields planted with poor seed the following diseases were prevalent: Rugose mosaic, leaf roll, purple top wilt, yellow dwarf, mouse ear, and giant hill, all virus diseases, were prevalent and destructive. Fusarium wilt (=-disease, F. solani var. eumartii) was causing much destruction, and black leg was noted in an occasional plant. Early blight was prevalent but usually not present in destructive proportion. Late blight was not seen.

Wyoming and Susquehanna counties (visited August 14)

Non-commercial plantings -- Spur blight and Septoria leaf spot (Mycosphaerella rubi) were very prevalent in raspberries. Alternaria spot was destructive to onion tops. Alternaria leaf spot (Alternaria sp.) of okra was prevalent but doing little damage. Snap beans were generally found to have a scattering of both common bacterial blight and halo-blight. Bacterial wilt was very destructive to cucumbers and occasionally present in melons. Pepper sun-scald followed by Alternaria was again very prevalent.

New York (August 18 to 21)

Collaborators: Drs. O. A. Reinking, G. L. McNew, R. F. Suit, R. C. Magie of the Geneva Agricultural Experiment Station, and Professors M. F. Barrus, Charles Chupp and Mr. B. L. Richards, Jr., of Cornell.

During the period August 18 to 21, inclusive, a survey was made of the plant disease situation in the following northwestern New York counties: Ontario, Yates, western part of Wayne, northern part of Steuben, Livingston, Monroe, Wyoming, Genesee, Orleans, Niagara and Northern Erie.

The area comprising southern Ontario, Yates and northern Steuben Counties produces large quantities of small fruits such as grapes, raspberries, blackberries, etc. The counties north and west of Yates County produce quantities of vegetables, fruits, some cereals and forage plants. Generally, it is one of the most important food producing areas in northeastern United States.

The following weekly, narrative report is divided on the basis of crop plants.

Beans -- The dry root rot (Fusarium spp.) of beans was observed in fields of Red Kidney, Marrow, pea beans, and others in Ontario, Wayne, Livingston, Monroe, Orleans, Genesee, Wyoming and Niagara Counties. Infection of plants appeared to very from none to more than 50% in fields of the outlined area. The disease appeared to be the most prevalent and destructive in Livingston, Orleans, and Monroe Counties and was usually more destructive in pea bean fields than in other kinds although 10 to 30% of the plants in Red Kidney bean fields were found to be infected. Since beans (of many kinds) are extensively produced in this area of heavy dry root rot infection, the losses caused by it are bound to be considerable.

The common bacterial blight of beans was observed in all counties named above, and was found on pea beans, Red Kidney, Marrow, Lima and snap varieties. The heaviest infection was observed in Ontario and Livingston Counties and had caused considerable destruction.

Halo blight of beans was found rather infrequently and appeared to be more prevalent in Ontario County than elsewhere.

The common and yellow mosaics of bean were everywhere present in the counties toured. These diseases were seen in commercial fields and in home gardens. Infection of plants ranged from a trace to as high as 80% (from bean virus 1), the latter figure being based on counts in a field near Middleport in Niagara County. The disease (Bean Virus 1) was especially destructive in pea beans.

Tomatoes -- An outbreak of Cladosporium leaf mold was noted in field tomatoes in Ontario County near Geneva, and Newark. Prevalence ranged upward to 100% in plants of certain fields. In such fields usually all leaves of an individual plant bore lesions. It is notable that this disease was seen only in northeastern Ontario and south central Wayne Counties.

Alternaria blight was observed in field and garden tomatoes in all counties visited. Generally it was present only in enphytotic form but near Johnson Creek and Hartland in Niagara County a severe epiphytotic had developed and had caused much destruction.

Septoria leaf blight was seen only in Ontario, Livingston, Genesee, Erie and Niagara Counties. Usually the disease was only mildly prevalent except for fields near Basom, Genesee County and Johnson Creek, Niagara County where it was causing considerable destruction.

Tomato mosaic was seen in almost every field examined throughout the area toured. Only occasional plants were observed to have the disease; the cucumber and tomato mosaic types were present.

Anthracnose (Colletotrichum phomoides) was observed in one field of tomatoes near Hartland in Niagara County. The fruit was very ripe and it appeared that loss in this commercial field would be considerable.

Cabbage -- Black rot and club root of cabbage were present in a few fields in Ontario, Monroe and Wayne Counties. Cabbage yellows was observed to be very destructive in one cabbage field near Williamson in Wayne County. Except for localized spot spreads these diseases are doing little damage.

Carrots -- Leaf blight of carrots (Alternaria and Cercospora) was very prevalent in non-commercial plantings examined in Livingston County. It was almost always noticed in carrot fields of commercial growers but appeared unimportant.

Clover -- Powdery mildew (Erysiphe polygoni) and rust (Uromyces trifolii var. fallens) were prevalent and destructive to red clover in Wayne and Ontario County fields.

Alfalfa -- Bacterial wilt (Corynebacterium insidiosum) and Pseudopeziza leaf spot (P. medicaginis) were observed to be very destructive to alfalfa in a field near Avon in Livingston County. Many fields were seen in which the stands were thin and it is probable that closer investigation would reveal that bacterial wilt has contributed to their decline.

Cucurbits -- Bacterial wilt of cucumbers was noticed in fields and gardens examined in each of the counties visited, indicating wide distribution and, consequently, considerable loss.

Mosaic and Rhizopus rot of summer squash were prevalent near Johnson Creek in Niagara county.

Peppers -- Peppers appeared to be quite free of diseases except for occasional plants exhibiting mosaic and Verticillium wilt.

Cereals -- In general the prevalence of smut in sweet and field corn was found to be exceedingly low. This was to be expected since it has been shown that extended periods of cold wet weather in late winter and during the spring months render the chlamydospores mostly non-viable.

Stem rust and leaf rust (Puccinia anomala) were found to be very severe in Ontario County fields of late barley. They were generally distributed but not so severe in fields of most of the other counties visited. Fusarial head blight (Gibberella zeae) was observed to be severe in one field in Livingston County. It was clear that the barley had followed corn which fact probably helps to explain the head blight epiphytotic.

Crown rust was extremely severe on oats in all counties. Stem rust was noted in fields of Ontario, Livingston, Wyoming, and Genesee Counties but not in the others.

Fruits -- Apple scab was everywhere present and destructive except in orchard trees which had been well sprayed.

Cherry leaf spot (Coccomyces hiemalis) was destructive in all counties visited.

Downy mildew (Plasmopara viticola) of grapes was very prevalent in vineyards of Ontario and northern Steuben Counties. Much damage was being done, particularly to the variety Delaware. However, greater damage was being produced by the ravages of the grape leaf hopper. Black rot was generally distributed but was causing appreciable damage only to the variety Duchess.

Powdery mildew (Sphaerotheca humuli), leaf spot, mosaic, Verticillium wilt and anthracnose were prevalent in raspberry plantings noticed in Ontario County but causing little damage. Powdery mildew frequently damages the variety Latham.

Leaf spot and anthracnose were noticed in 2 blackberry plantings visited in Ontario County but appeared unimportant this season.

Mycosphaerella leaf spot (M. grossulariae) of gooseberry and Pseudopeziza leaf spot (P. ribis) of currant were prevalent and destructive. Powdery mildew (Sphaerotheca mors-uvae) was found very destructive to gooseberries in one planting near Geneva, Ontario County.

A relatively new disease to upstate New York blueberries, known as "Stunt disease" (due to virus), is being investigated by Dr. R. F. Suit, Geneva, N. Y. He has found the disease to be particularly destructive in the variety Pioneer.

Potatoes -- For late blight see with other late blight reports.

Fusarium wilt appears rather generally distributed in the northwest New York Counties named on first page of this report. Usually it could be found without difficulty in gardens but not so easily in commercial fields. Its prevalence usually was very low, not more than a trace.

A disease which is being called calico of potatoes (not certain of identity) was observed in potato fields of Wayne, Ontario, Orleans, Monroe, and Erie Counties. Not more than 1 or 2 plants were encountered in any one field. Since only a small portion of each field was examined, it is obvious that many more were doubtlessly present.

Virus diseases of potatoes were always very prevalent in garden plants but in commercial fields their prevalence usually was low.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

PLANT DISEASES IN CENTRAL AND WESTERN WEST VIRGINIA

C. F. Taylor

From August 17 through August 20, a trip was made through the central and western sections of West Virginia. Especial attention was paid to tomatoes throughout this trip. Apple orchards in the lower Ohio Valley were examined carefully.

Tomatoes -- Fields, mostly garden patches, from Clarksburg south through Buckhannon, and Webster Springs to Summersville, showed late blight in 7 of 8 gardens. The one exception was in a well-sprayed garden in which Bordeaux mixture had been used frequently. A neighboring

unsprayed garden showed severe loss. In one small patch recently flooded and shaded by corn, 50% of the fruit was affected. All vines had been killed in one garden; late blight was suspected but no positive diagnosis was possible. Representative gardens ranged from a trace to 50% of the leaves and a trace to 20% of the fruit destroyed. The average in these observed fields would be about 10% of the foliage and 4% of the fruit destroyed by late blight.

In this area, early blight was causing little damage except in 2 early fields where loss was estimated at 50 and 80% of the foliage, respectively. A trace was observed in the well-sprayed garden mentioned. In the Huntington area early blight was prevalent. In Mason County(along the Ohio River) leaf loss ranged from a trace to 90% of the foliage on early fields. Very late fields in this area showed traces of the leaf spot. Gardens in Parkersburg showed 40% to 80% defoliation due to early blight, and similar conditions were observed north to New Martinsville and back to Morgantown. Losses ranged from a trace to 10% of the foliage on plants on which only a few fruits had ripened. On early fields on which 2 or more clusters had ripened, losses ranged from 40 to 90% of the foliage, averaging possibly 60%.

Septoria leaf spot was more severe north of Parkersburg than through the central and southern part of the State. In one field near St. Marys (on the Ohio River) 80% of the leaves were dead and most of the current spotting was due to Septoria. There were several thousand plants, staked, in this field. In other fields Septoria was approximately equal to Alternaria in prevalence.

In one garden in Parkersburg in which surrounding shrubbery made drying slow, approximately 30% of the leaves were affected by leaf mold, some plants having 100% leaf infection. Three gardens in another section of Parkersburg showed traces.

Traces of mosaic were observed in most patches observed. In one field of 1000 plants, every plant was infected. The plants were stunted, showed pronounced mottling, and were setting few fruits. The crop was practically a total loss. These plants were obtained from a greenhouse, and it was said that other growers had had "poor" plants from the same source.

Beans -- Anthracnose was seen in a few gardens. In one case it apparently had originated in a row from home-grown seed and had spread to other plants. At least 80% of the pods were severely infected. Little loss was observed elsewhere. Bacterial blight was found on pods of an unknown variety in one garden in which home-grown seed was used. Not more than 5% of the pods were infected. Bean rust (Uromyces phaseoli var. typica) was severe on plants of an unknown variety in a garden in Parkersburg and in one in St. Marys. Other beans in the same gardens were not affected.

Other Vegetables -- Alternaria leaf blight killed all the carrots in one garden when small. In most gardens loss ranged from a trace to 40% of the leaves.

Leaf spot (Cercospora beticola) was present on all plants of beets and Swiss chard seen, but not severe.

Field Corn -- Helminthosporium stripe (H. turcicum) was observed in only 2 of the several hundred fields seen. The affected fields were in Nicholas and Mason Counties. In one case the variety was Ohio 20, where

neighboring fields of Ohio W 17 were free from stripe. In the other field the variety could not be determined.

Apple -- Through the central part of the State most buds were killed by frost. In the lower Ohio Valley the crop is light.

In 5 commercial orchards examined scab infection approached 100% on leaves and fruit of Rome Beauty. On Grimes fruit scab ranged from 10 to 40%.

In most instances bitter rot was well controlled by appropriate sprays. In one poorly sprayed orchard about 15% of the fruit was affected. One Golden Delicious tree in this orchard showed about 80% of the fruits rotted by bitter rot while the other trees of the same variety averaged approximately 5% loss. Loss due to bitter rot will not exceed 1.5% on susceptible varieties in commercial orchards in this section.

Severe leaf scab infection and burning by spray materials have so reduced the apple foliage in many varieties that the fruit is not expected to become large.

One home-garden Gano tree showed 60% of the fruit attacked by bitter rot, 80% by blotch (Phyllosticta solitaria), and 50% by scab. The foliage was badly scabbed and severely burned by spray material. The spray schedule used was not determined.

Other Fruits -- Fruit was seen on peach trees in only one orchard. Most of the peach buds were killed by spring frost. Loss from brown rot was slight since the orchard was well sprayed and recent weather in this location had been dry. Peach yellows (virus) is prevalent throughout the State in home plantings and in roadside trees. It is estimated that 20% of such trees show yellows symptoms.

On grapes, losses due to black rot ranged from 50 to 75% of the fruit. In one garden planting downy mildew was abundant and present on all leaves.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

OBSERVATIONS ON PLANT DISEASES IN SOUTHERN OHIO

M. R. Harris

(See also under potato late blight and under soybean disease reports.)

Corn -- Observations were made on corn fields around Columbus and to both the southwest and southeast. Leaf spot (Helminthosporium turcicum) is appearing in most of the fields observed. It is found on the lower leaves only and is doing no appreciable damage. The disease appears to vary somewhat in intensity on the various strains of hybrid corn.

Hail damage to corn is found from one side of the state to the other in south central Ohio. Damage is highly localized in most places and ranges from light to severe. Around London a medium amount of damage was observed. In southern Clark county damage was noted which ranged from very light to severe. In some fields the leaves were reduced to ribbons and one-third of the leaf surface was destroyed. There is ample opportunity for fungi to damage the corn in this area later this year.

Apples -- Commercial apple orchards in the south-eastern part of the state were inspected for the presence of disease. Scab is generally controlled but occasional trees show some infection. It was noted that dusting with sulphur between sprays is believed to be the factor which kept scab from severely infecting these orchards.

Blotch was present on most trees in minute amounts and was not of commercial importance.

Frog-eye disease causing a leaf spot was observed in southeastern Ohio but not north of Wooster where an orchard was inspected.

Bitter rot was present in all of the orchards inspected but was not of commercial importance.

Notes on vegetable diseases -- Near Columbus, sweet corn shows slight damage by Stewart's wilt disease (Bacterium stewartii). Tomatoes show an occasional fruit having anthracnose spot.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

PLANT DISEASES IN INDIANA AND ILLINOIS

R. C. Baines

(See also under soybean disease reports)

Indiana: During the week ending August 7 a trip was made from Goshen in northern Indiana to Vincennes in southern Indiana to obtain information on the occurrence and prevalence of the diseases of the chief crops grown along the route.

Tomato -- Ten fields of tomatoes in the vicinity of Lafayette were examined in company with Dr. R. W. Samson on Wednesday, August 4. Approximately one-half of the fields examined in this area were moderately to severely infected with Septoria lycopersici. This disease is much more prevalent and occurs in greater severity than usual and very likely will result in important losses due to the effects of defoliation on the yield and quality of the fruit.

One field was affected severely with bacterial spot caused by Xanthomonas vesicatoria. Infection occurred on the fruit, leaves, and stems. In another field near Lafayette the tomatoes were affected slightly with bacterial spot and severely with Septoria leaf spot.

In a 20-acre field of which about 10 acres had been planted late with Tennessee-grown plants, between 3 and 4% of the plants were girdled or nearly girdled by Alternaria collar rot (A. solani). Such infected plants were nearly dead or were injured to such an extent that they would produce no crop. The other half of this field had been planted with Georgia-grown plants and about 1% were affected with bacterial wilt, caused by Bacterium solanacearum. According to Dr. Samson, bacterial wilt has occurred rather generally on Georgia-grown plants set out after June 1.

Thirty-five acres of tomatoes were severely affected with Fusarium wilt (F. bulbigenum var. lycopersici) near Lafayette. At this time between 20 and 25% of the plants showed definite symptoms of wilt. In another field near Lafayette and in 2 fields near Vincennes between 1 and 3% of the plants were affected with Fusarium wilt.

Tomatoes in the vicinity of Vincennes appeared to be free from Septoria and bacterial leaf spot diseases. The differences observed in the prevalence of Septoria and bacterial spot on tomatoes at Lafayette and Vincennes appear to be due to differences in the amount of rainfall during June and July. The relationship of rainfall in these 2 areas to the degree of infection should be determined more accurately at a later date.

Cucurbits -- Between 2 and 3% of the cucumber plants in a 15-acre field near Rochester were affected by bacterial wilt.

In a 20-acre field of cantaloups 5 miles south of Vincennes between 25 and 30% of the plants had died or were affected severely with wilt caused by Fusarium bulbigenum var. niveum. The harvest from many of the cantaloup fields in this area had been completed and such fields were not examined, since the plants in most cases had deteriorated appreciably and were infested with aphids.

No Fusarium wilt was found in the 11 fields of watermelons examined near Vincennes. Wilt-resistant varieties chiefly are grown in this area. Occasionally a wilt-susceptible variety is planted in a field on which melons have not been grown previously.

Leaf spot of watermelon caused by Alternaria cucumerina was moderately severe in one field 5 miles south of Vincennes.

Fruit Crops -- Apple scab appeared to be causing serious losses in many orchards especially in the northern half of Indiana. In many of the orchards much of the fruit is infected with scab and the leaves are severely infected. In the vicinity of Vincennes the fruit in well-sprayed orchards showed little scab infection, even though the leaves of varieties particularly susceptible to scab, such as Rome Beauty and Winesap, were infected moderately.

Mr. L. Steiner at Vincennes mentioned that an occasional apple infected with bitter rot had been found. Unless frequent rains occur during August there should be little increase in the severity of this disease.

The light crop of peaches in some of the orchards in the Vincennes area is now being harvested and at this time is nearly free from brown rot. Bacterial leaf spot is causing appreciable defoliation at Lafayette but in the vicinity of Vincennes infection is confined largely to a few trees in certain orchards.

Cherry leaf spot has caused severe defoliation of cherry trees in orchards and in home plantings.

In the vicinity of Lafayette, black raspberries that received only a dormant spray are severely affected with anthracnose and the Septoria leaf spot.

Sudangrass -- Leaf blight caused by Helminthosporium turcicum appeared to be reducing the value for feed of sudangrass in a 15-acre field by 50 to 60%. Approximately 75% of the leaf area was severely blighted and necrotic.

Alfalfa -- The second growth of alfalfa in 4 fields between Goshen and Lafayette was moderately to severely affected with Pseudopeziza leaf spot. In one field near Nappanee the plants were etiolated, partially defoliated, and the yield of the second cutting reduced at least 50%.

Peppermint -- Two fields of peppermint in the vicinity of Nappanee were affected severely with anthracnose, caused by Sphaceloma menthae. The yield of oil of peppermint from one of the fields was estimated to be reduced at least 50% by this disease. The second field had been planted in the spring and will not be harvested for 4 or 5 weeks. Thus, at this time it would be difficult to estimate the effects of this disease on the yield of this field.

Illinois: On Friday, August 20, I accompanied Dr. H. W. Anderson and Dr. M. B. Linn on a trip to the vicinity of Havana to examine the cantaloup and watermelon crops. Incidental observations were made on diseases of some other plants.

On Fusarium wilt-infested fields between 25 and 60% of the plants of wilt-susceptible varieties of watermelons such as Cuban Queen and Florida Giant were killed or wilted.

In one watermelon field Alternaria leaf spot had caused approximately 50% defoliation.

Approximately 1% of the sweet potatoes of the Nancy Hall and Yellow Jersey varieties in a 4-acre field near Havana were infected with Fusarium wilt (F. bulbigenum var. batatas or F. oxysporum f. 2). A 5-acre field of cantaloups on the same farm contained approximately 2% of the plants infected with wilt which appears to be due to Fusarium sp.

Septoria lycopersici was causing about 30% defoliation in a field of tomatoes near Havana. In this same field an occasional plant was infected with what appeared to be aucuba mosaic (virus).

A field of sudangrass in McLean County, Illinois, was infected severely with Helminthosporium turcicum, approximately 80% of the leaf surface being killed.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

DISEASES IN EASTERN TENNESSEE

R. A. Hyre

The counties visited during the period of this report are located in the eastern tip of the State. Blount, Knox, and Sevier Counties were visited August 6 to 14; Greene, Cocke, Hamblen, Jefferson, and Johnson Counties between August 16 and 21.

Tomato -- In Sevier County 4 acres of Rutgers tomatoes were a total loss, the following factors contributing: severe and general root knot (Heterodera marioni), severe Alternaria defoliation and stem cankers, and the presence of soft rot (? bacterial) of the fruit. The plants had been obtained on the market.

Two home gardens were examined in Knox County. One suffered 60% loss of the fruit on 120 plants of 4 varieties due to buckeye rot (Phytophthora parasitica). The plants were not staked, sprayed, nor pruned. In the other garden, in a late stage of harvesting, there was 60% defoliation from early blight.

On 500 acres of tomatoes in Jefferson County, one cannery expects to harvest one ton per acre. The estimated loss is 5 tons per acre or

2500 tons. At $22 per ton paid to the grower this amounts to $55,000 loss to the growers alone, without figuring the loss to the cannery. The loss was due principally to buckeye rot of the green fruit. Also, bacterial soft rot of the ripe fruit was severe. Early blight was general but not severe. I saw 3 fields and buckeye rot was most severe on the richer ground that had received 2 tons of manure, 400 lbs. of 4-12-4 fertilizer in the row, and 300 lbs. of 18% phosphate broadcast. It was less severe in a field that had received the fertilizer in the row only. The variety was Marglobe.

In Cocke County I was informed at a tomato cannery that the tomatoes were all harvested but that they "just didn't have any this year."

In Hamblen County I rode with a cannery tomato pick-up truck. In 3 fields early blight defoliation was general and resulted in some sun scald, and bacterial soft rot was general. No buckeye rot was seen.

In one field observed in Jefferson County there was some buckeye rot and early blight was general. In another, buckeye rot and bacterial soft rot occurred and defoliation from early blight was rather severe.

Bean -- In Sevier County 4 acres of Giant Stringless Green Pod and 4 acres of Tennessee Green Pod (Brown Bunch) were a total loss. The plants blossomed and then died. The cause could not be determined as the area had been replanted, but adjacent tomatoes were severely affected by root knot. In a garden planting of bush beans, 34% of the pods were infected by Rhizoctonia solani, 2% with Pythium.

Three plantings were examined in Knox County. In one experimental plot of Giant Stringless Green Pod, Rhizoctonia stem and pod rot was severe, and a trace of Pythium rot was present. In one home garden Kentucky Wonder pole beans suffered 50% loss from root knot. In another garden Rhizoctonia stem and pod rot had caused 20% loss of Giant Stringless Green Pod bush bean.

Commercial plantings were examined in Johnson County. A large majority were of the variety Tendergreen. The others were variety Plentiful. The Mexican bean beetle was always present. Angular leaf spot, Isariopsis griseola, was generally present but of little economic importance. Only a trace of mosaic was seen.

In fields 1 to 3, about 40 acres, there was no anthracnose. Certified Idaho-grown seed was used. This concern had over 100 acres with only a trace of anthracnose.

In field 4, of 8 acres, anthracnose was generally present. The beans were re-sorted, then the field was abandoned. The grower estimated 45% loss from anthracnose. The seed were purchased locally, the product of a well-known seed firm, but there was no statement on the bag as to where the seed were grown.

Field 5, of 12 acres, was of young beans not yet in blossom. The stand was estimated at 60%. The poor stand was due to dry root rot (Fusarium martii var. phaseoli). The seed was purchased locally. On 2 tickets from the seed bags the place where the seed was grown was not indicated.

Field 6, of 21 acres, had been abandoned as a total loss. No anthracnose was found, but dry root rot and Mexican bean beetle were severe. The seed was purchased locally. The plants were said to have blossomed

but had set no pods.

In field 7, of 10 acres, anthracnose in the first picking resulted in a reduction in the market price of 25 cents per bushel, in the second picking of 20 cents. The grower estimated his loss at 10% as a conservative figure, or approximately $400. The seed was purchased locally, and the buyer was given the impression that it was Idaho-grown. One field from certified Idaho-grown seed was the only "good" field this grower had.

Field 8, of 30 acres, had been abandoned because of anthracnose (locally called "nailhead rust") after picking 600 bushels, half of which were sold at 40 cents a bushel. The loss was estimated at 3000 to 4000 bushels, approximately $6,000. In this field Mexican bean beetle infestation was slight and scattered. The seed was purchased locally under the impression that it was Idaho-grown. Another 10-acre field just in bloom, planted with seed from a different source did not show anthracnose as yet. In 1942 this grower used certified Idaho-grown seed on 7 acres and harvested 1730 bushels of beans. This year he planted 41 or 42 acres and another 10 acres on a 1/2-share basis and suffered a heavy loss.

Field 9, a small planting, was abandoned as a total loss from anthracnose. The seed was purchased locally.

Field 10, of 20 acres, was abandoned because of anthracnose. The seed was purchased locally. The loss was estimated as $5,000. Another field of the same grower, just coming into production, showed traces of anthracnose on the leaves.

Fields are abandoned when they contain a fair amount of anthracnose since the buyers at the auction sales will not buy an affected crop for fear the beans will be unfit for use upon arrival of truck shipments at their destinations. Disfigurement of the pods by the bean beetle does not prevent the sale but lowers the price.

In this survey I was directed to the growers who suffered the greatest losses from anthracnose. These growers were unable to get certified Idaho-grown seed and purchased seed locally, but were given the impression that it was Idaho-grown. A Farmers' Cooperative hopes to obtain a car-load of certified Idaho-grown seed for local distribution in 1944.

Watermelon -- A loss of 85% ($1, 500) was estimated in one field of Stone Mountain melons in Sevier County, due principally to anthracnose (Colletotrichum lagenarium). No fungicide was applied.

Rhubarb -- Phytophthora foot rot or crown rot was so severe in a one-acre field in Sevier County that the grower harvested during the first year because so many of the plants were killed.

Corn -- The following tabulation summarizes observations on corn diseases.

County	Percentage of disease				Remarks
	Helmintho-sporium	N defi-ciency	K defi-ciency	Smut	
Knox	13, rather severe	52			Home garden, Tennessee Hybrid sweet corn. Also 58% bacterial wilt
Sevier	6	2	33		Home garden
Greene	81, severe				Variety Golden Prolific
Greene			32	6	
Greene	7	1		1	
Johnson	68		21		
Jefferson	26	38			Leaf blight occurred in low areas where there was no N deficiency
Jefferson	9			4	

Tobacco -- In a small planting in Sevier County, 7% of the plants showed ringspot infection. Mosaic was observed in 3 fields, one in Cocke County with 2%, and 2 in Greene County with 1% in each. In one field in Greene County tobacco in low areas was badly affected by wildfire (Pseudomonas tabaci), and the farmer was cutting it green to save it. Another field in Greene County, variety Kentucky 16, showed 100% severe nitrogen deficiency.

Tobacco is very uneven in growth this year.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

PLANT DISEASE SURVEY IN OKLAHOMA

Howard W. Larsh

(See also under soybean diseases and cotton diseases)

Northeastern Oklahoma, August 7 to 13

Tomato (245 acres observed) -- The following diseases were observed in nearly all of the plantings surveyed: blossom-end rot, root knot, Septoria leaf spot, Alternaria blight, Fusarium wilt, mosaic, and damping-off. The first 3 diseases listed were of considerable importance. In one planting near Westville, Adair County, a loss of 30 to 40% was estimated. Root knot was bad near Westville in all plantings. A loss of 10 to 20% was not at all uncommon. Septoria leaf spot was very common near Bixby in Tulsa County. In one field the loss due to this fungus was nearly 10%. All of the other diseases mentioned were found in various plantings but were not causing much loss. In most cases only 3 or 4 plants were found to be infected.

Sweetpotato (312 acres) -- Stem rot (Fusarium) was the most common disease observed during this survey, the estimated damage in all plantings examined ranging from 5 to 10%. Java black rot (Diplodia tubericola) was present in one planting at Castle, Okfuskee County, with less than 1% damage. Leaf spot (Septoria bataticola) was found in 2 plantings causing very little damage. The greatest damage being done to sweetpotatoes is that from adverse weather conditions.

Cucurbits -- 170 acres of cantaloups were surveyed. Most serious damage occurred in the Weleetka area (Okfuskee County) and in the immediate vicinity. Three diseases were found in all plantings observed. In one 40-acre field bacterial wilt destroyed nearly all of the plants. In all fields surveyed this disease was more prevalent than the others, loss due to it varying from 100% to less than 5% depending upon the location. Alternaria leaf spot was found to be very common; however, owing to weather conditions spread has been very slight. The loss due to this disease, even though it was found on nearly every plant, was very light. Downy mildew (Pseudoperonospora cubensis) spots were observed on a few plants especially in low lands on the lower leaves.

Late cucumber plantings located in Tulsa County were affected by 2 very common diseases, Alternaria leaf spot and downy mildew. In the 45 acres surveyed the damage done by these 2 fungi was rather light, less than 2%; however, the leaf spot was very common.

In the 2 watermelon districts (116 acres) surveyed this week, the following diseases were observed: Fusarium wilt, anthracnose, leaf spot, and fruit rots. The greatest loss due to wilt was in the region of Weleetka, where nearly 15% of the hills were destroyed by this disease. Anthracnose was found to be causing over 5% damage to the fruit in one field near Bixby.

Corn (220 acres) and Sorghum (87 acres) -- Corn fields were examined in each of the 11 counties surveyed this week. Smut was the most important disease observed, infection being estimated at nearly 10% in each planting. The 2 ear-rot diseases, Diplodia and Fusarium, were found on 3 to 5% of the ears harvested.

Bacterial streak (Xanthomonas holcicola) and bacterial spot (Pseudomonas holci = P. syringae) infections were prevalent on sorghum; however, the damage inflicted is difficult to estimate. Perhaps less than 2% of the photosynthetic tissue was destroyed. These sorghum plantings were not located in the principal sorghum areas of the State.

Apple (460 acres) -- The high incidence of diseases in all orchards, in the opinion of county agents and growers, can be correlated with the weather conditions that prevailed during the spraying season, especially during the early part of the growing season. Most of the early sprays were washed off and owing to the poor set of fruit many of the growers did not spray later in the season.

The following diseases were found in every orchard examined, in varying degrees of severity: blotch (Phyllosticta solitaria), scab, brown rot (Monilinia fructicola), and black rot (Physalospora obtusa). In large orchards located at Castle in Okfuskee County and at Bixby in Tulsa County the loss amounted to 40 to 50% on susceptible varieties, from these diseases. Scab was found to be extremely severe in all orchards.

In normal years this disease is controlled without too much difficulty in Oklahoma.

Peach (400 acres) -- In all of the orchards surveyed bacterial spot was found to be very prevalent. In 2 orchards consisting of over 150 acres in Tulsa County this disease was causing serious defoliation, which was very severe in one young orchard, many of the trees being almost completely defoliated. Peach scab was found in all plantings on the foliage and on all of the fruits that were set (27 fruits observed in one planting). Brown rot was extremely common on mummies and on fruits still hanging on the trees. Wood-rotting fungi were causing serious damage in one orchard in Tulsa County. These fungi entered wounds resulting from poor pruning technique. Leaf curl (Taphrina deformans) was found in one orchard; however, only a few trees were affected and damage was less than 1%.

Other Fruit Crops -- All of the pears observed (10 acres) were in the vicinity of Yale, in Payne County. Two diseases were found causing significant loss. Fireblight (Erwinia amylovora) was prevalent in both plantings examined causing loss estimated at nearly 15%. Black rot (Physalospora obtusa) was found on 10 to 15% of the fruit both on the ground and still on the trees.

The most common disease in the 42 acres of grapes examined was black rot. In a planting at Okmulgee (Okmulgee County) a loss of 60 to 80% resulted from this disease. In the same planting downy mildew was observed; however, very little damage resulted from its attack. Other than this particular planting the loss from black rot was 15% or less. Loss from downy mildew was less than 2%. Anthracnose (Elsinoë ampelina) was found in one vineyard near Bixby; however, this disease caused very little loss.

In the vicinity of Okmulgee 2 diseases were observed causing serious damage to blackberries (15 acres). Anthracnose (Elsinoë veneta) on one farm was causing damage estimated at 20%; and orange rust (Gymnoconia peckiana) was found on many plants, reducing the photosynthetic area approximately 5%.

Pecan (355 acres) -- With the exception of plantings at Castle in Okfuskee County pecan trees were in fair condition from the disease standpoint. Pecan scab (Cladosporium effusum) was prevalent on the foliage and fruit of approximately 30 to 40% of the trees in one orchard of over 200 acres. Downy spot (Mycosphaerella caryigena) was affecting 5 to 10% of the leaves in this same planting.

Peanut (500 acres) -- Cercospora leaf spot is very common and widespread, being found in nearly all plantings, but weather has been unfavorable for its spread and very little loss has resulted. Rhizoctonia root rot caused severe losses in the plantings near Okemah (Okfuskee County) and Henryetta (Okmulgee County). The loss in one field was nearly 35%. Insects are causing serious losses in many plantings throughout the regions surveyed.

Central Oklahoma and the southwestern part of the State along the Texas border, August 14 to 20

Tomato (175 acres) -- Root knot near Grandfield (Tillman County in southwest) is severe enough to cause nearly 5% loss. Septoria leaf spot was found in nearly all plantings observed but caused very little loss.

Sweetpotato (137 acres) -- Fusarium stem rot was the only disease observed in plantings surveyed this week. The total loss was less than 2%. Sweetpotatoes are being affected most severely by the dry weather which continues to prevail in Oklahoma.

Corn (180 acres) and Sorghum (430 acres) -- As before, corn fields were examined in every county surveyed during the week. Smut was very prevalent in fields near Tishomingo (Johnston County); however, the average loss in the fields observed would not be more than 10%. Ear rots were causing a loss of approximately 2 or 3%. Diplodia was more prevalent than Fusarium.

Both bacterial spot and bacterial streak were present to some extent in every sorghum planting examined. Smut [type not specified] was causing a loss of approximately 15 to 25% in one planting near Grandfield. In this same field bacterial spot was very severe on about 10% of the plants.

Peach (125 acres) -- Bacterial spot, brown rot, and peach scab were all present in all of the plantings surveyed. Bacterial spot again was found on all trees observed and in 2 cases was causing severe defoliation.

The greater set of fruit in this area enabled a more reliable determination of the damage from brown rot and peach scab than could be made in northeastern Oklahoma during the preceding week. In plantings near Guthrie (Logan County, central) brown rot was present on approximately 5% of the marketable fruit. Many mummies were found on the ground and still clinging to the trees. Both peach scab and bacterial spot were less severe than brown rot. Fruit infection could be estimated at a little over 2%.

Plum (25 acres) -- Two diseases are common on plums in the vicinity of Guthrie, namely bacterial spot and brown rot. Bacterial spot is less serious on plum than on peaches in the same region. Only slight defoliation has resulted on plum. Brown rot was fairly common on the fruit as shown by mummies still on the trees and on the ground. The fruit had been harvested and no estimate of the loss could be made; however, judging from the number of mummies, it must have been at least 5%.

Raspberry (70 acres) -- The only disease noted was anthracnose. Damage was greatest in the region west of Shawnee (Pottawatomie County) where nearly 5% of the canes were affected.

Peanut (1870 acres) -- Cercospora leaf spot was the most frequently observed disease in areas surveyed this week. Damage remains slight because of weather conditions; nevertheless, in several fields the disease had caused the lower leaves to fall. Rhizoctonia root rot was found to be causing a loss of 2 to 5% in several plantings from Ardmore (Carter County, southern) east to Tishomingo (Johnston County). The most serious damage is being inflicted by insects.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

PLANT DISEASES IN COLORADO

E. W. Bodine

Potato -- During the week ending August 14, early potatoes were being harvested around Gilcrest in Weld County. Common scab (Actinomyces scabies) was present in practically all fields, infection ranging from 50 to 100% in some. The average for the early crop in this region is possibly 10% of the tubers infected. The Cobbler and Triumph varieties are extremely susceptible.

Early potatoes were being harvested in the vicinity of Wiggins in Morgan County, also. Only a trace of scab was found here. This is only the second season potatoes have been grown in this area. In 1942, 500 acres of potatoes were planted, while in 1943, 1500 acres are being grown. A trace of scab was found in areas around Brush and Fort Morgan in Morgan County.

The virus diseases most commonly found in this area are mosaic and haywire. Infection by the 2 diseases ranged from a trace to 5% in the fields inspected.

The Fusarium wilt diseases caused by F. solani var. eumartii and by F. oxysporum were present in most late potato fields.

In the Gilcrest district, early blight infection of plants ranged from 50 to 100% in practically all early fields inspected. In the early potato districts around Wiggins, Brush, and Fort Morgan infection ranged from 10 to 25%. A trace of tuber rot caused by Alternaria solani was found at Brush.

Plants in late potato fields were showing from 2 to 10% of early blight on the foliage.

Tomato -- (See also report on ring spot, page336). Bacterial canker was found on only a trace of the plants in only a few fields inspected in northern Colorado during the week ending August 21. Characteristic symptoms were observed on both vine and fruits. Aucuba mosaic (virus) was found on a trace to 1% of the plants in the fields inspected. Spotted wilt infection was observed in only a few fields on a trace to 1% of the plants.

Peas -- Pea fields in the San Luis Valley of southern Colorado were examined in company with Mr. J. L. Forsberg of the Colorado Experiment Station early in August. Several types of root rot have been found in Colorado, but 3 groups of fungi, namely, Fusarium, Rhizoctonia, and Pythium, appear to be responsible for most of the damage. The most serious parasite is probably Fusarium martii var. pisi. Infection ranged from 50 to 100% of the plants in all the fields in the San Luis Valley. Practically all the growers treated the seed with Ceresan at the rate of 1 oz. per bu. This insures a stand but does not eliminate the disease. However, most of the growers obtain at least 2 pickings before the plants are killed.

Pods affected by bacterial blight (Pseudomonas pisi) were sent in from La Jara, Conejos County. The county agent reported about 10% infection.

Beans -- Most bean fields examined in Weld and Morgan Counties in northern Colorado during the week ending August 14 were showing a trace of bean rust. In a few fields infection ranged from 50 to 100% of the plants. Infection possibly occurred about July 30. Spraying with lime sulfur 1-75 was being tried to control rust, and sulfur dust also was being used in some fields. Most fields which would be harvested during the following week, would escape damage. Yields in later fields will undoubtedly be reduced.

In the Fort Collins area common bacterial blight was just starting to show spread at the end of July. During the week ending August 21, 5 to 10% was found in most fields inspected in northern Colorado, with a trace of infection on the pods. Two loads of beans checked at a loading platform in Denver were turned down for shipment because of 18 to 20% pod infection.

A trace to 2% of mosaic was found in most fields.

Celery -- In northern Colorado during the week ending August 21, a few plants infected by bacterial soft rot (Erwinia carotovora) were found in most fields.

Late blight (Septoria apii) was very common in all fields. Infection ranged from 20 to 100% of the plants. Conditions appear to be very favorable for further development in the truck crop areas. Possibly 10% of the late-planted celery will be lost due to this disease.

Yellows (Fusarium apii) is difficult to find in the early summer type of celery, because practically all growers are using the Michigan Golden variety which is extremely resistant.

Celery mosaic (possibly celery virus 1) affected from a trace to 5% of the plants in most fields. According to one grower the disease appeared first in 1940. In several areas the growers have stated that it is impossible to produce a crop of celery on account of mosaic.

Pink rot (Sclerotinia sclerotiorum) was found on a few plants in most fields.

Onion -- Specimens of purple blotch (Alternaria porri) were received from the Arkansas River Valley in southern Colorado and from Brush in the northern part of the State. Infection to August 14 was said to be only a trace. However, if weather conditions should become favorable, a severe epidemic might result in the Arkansas Valley, since in 1942 40 to 50% infection occurred in many fields in that region.

Other Vegetable Crops -- (In northern Colorado, Adams, Arapahoe, Denver, Jefferson, Larimer, and Weld Counties during the week ending August 21). Bacterial soft rot occurred in traces in practically all carrot fields.

On peppers, 1% of mosaic, and 2 to 3% of a ring spot type of virus infection, were found in most fields. A specimen of the latter had been sent in from Pueblo in southern Colorado, earlier. Phytopthora blight (P. capsici) was found only in one 1-acre field near Welby, where 30% of the plants were infected.

A few squash plants were affected by a root rot (? Fusarium sp.) in most gardens and fields observed. In one field of summer Crooknock squash 50% of the plants were infected by mosaic; and 30% infection was observed in one field of summer green squash.

Leaf spot (Cercospora beticola) affected from 3 to 5% of the plants of garden beets in many fields but caused no damage.

Corn -- Practically all fields examined in northern Colorado showed 1 to 2% infection by smut.

Alfalfa -- Most fields in northern Colorado not over 3 years old show 1 to 2% of bacterial wilt (Corynebacterium insidiosum). In older stands from 10 to 30% of the plants are dead. Mosaic is common in most fields, percentage of infection ranging from a trace to 10.

Apple -- Fireblight affected practically all trees observed in the Canon City area of southern Colorado during the first week of August. It had eliminated possibly 10% of the fruit.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

REPORTS ON DISEASES OF COTTON

MISSISSIPPI: The cotton crop of the Delta area was growing under very adverse conditions, because of drought. Losses in early cotton are estimated by the growers to be as high as 25 to 30% from this cause. Fusarium wilt (F. vasinfectum) was more prevalent than usual, especially in the lighter soils of the area, and one field was found east of Greenwood in which about 15 to 20% of the plants were infected by the wilt organism. Angular leaf spot (Xanthomonas malvacearum) was prevalent over the area. (L. H. Person, Emergency Plant Disease Prevention Project. August 15 to 21)

OKLAHOMA: In northeastern Oklahoma (Arkansas River Valley) 600 acres of cotton were observed August 7 to 13. The most widespread disease of cotton in these areas was angular leaf spot. In 2 or 3 plantings in Payne and Muskogee Counties severe defoliation resulted from attack by this disease aided by weather conditions. Angular leaf spot was present in some degree in every planting surveyed but because of the extreme dry weather it had failed to cause much damage except in the cases cited. Cercospora leaf spot (C. gossypina) was found causing serious defoliation in one field between Muskogee and Taft. The damage was estimated at nearly 30% in a 40-acre field. Fusarium wilt was less than 1% in any field observed on this trip.

Cotton in various areas throughout this region was revealing marked soil deficiencies, especially typical signs of magnesium and potassium hunger.

From August 14 to 20, cotton was surveyed in fields totalling 2060 acres, in central Oklahoma and the southwestern part of the State along the Texas border. Phymatotrichum root rot (P. omnivorum) in southwestern Oklahoma, Fusarium wilt, and angular leaf spot, were found causing considerable damage.

An extensive survey was made in the regions where root rot had been reported in past years in an attempt to determine how extensively it has spread in recent years. In Tillman, Cotton, and Jefferson Counties the disease was well-established and was doing a great deal of damage in many fields. Near the town of Grandfield in Tillman County, in one

planting at least 40% of the plants were killed by this fungus. Root rot could be found with little effort in fields from Frederick in Tillman County to 2 miles east of Waurika in Jefferson County. This does not constitute a statement that the disease is limited in distribution to the areas reported herein.

Angular leaf spot was again the most prevalent cotton disease observed. Very few, if any, plantings were free from this disease. Fields in the region of Shawnee in Pottawatomie County (central) were showing signs of defoliation due to this disease and adverse weather conditions.

Fusarium wilt was observed in several plantings, most conspicuously northeast of Shawnee. One field in this region had a loss of nearly 3% attributable to wilt. (Howard W. Larsh, Emergency Plant Disease Prevention Project).

SOME NEW RECORDS FOR PLANT DISEASES

RING SPOT VIRUS DISEASE OF TOMATO IN COLORADO: Dr. W. A. Kreutzer and I have identified a new virus disease of tomato in Colorado, the ring spot type of virus as reported by R. W. Samson and E. P. Imle (from Indiana, Illinois, and Missouri; Phytopath. 32: 1037-1047. 1942). Specimens have been received from around Fort Collins, Fort Morgan, Greeley, Denver, Boulder, and Brighton in northern Colorado, and Canon City and elsewhere in the Arkansas River Valley in the southern part of the State. Severity in victory gardens ranges from a trace to 50% and the disease is spreading. Only a trace is found in commercial fields.

In the Canon City area, August 6, the disease was observed in small garden patches, infection ranging from a trace to 100% of the plants. In northern Colorado during the week ending August 21, practically all fields inspected showed infection ranging from a trace to 10% of the plants. (E. W. Bodine, Emergency Plant Disease Prevention Project).

TWO NEW RECORDS FOR CHOANEPHORA ROT OF SQUASH:

Choanephora Squash Rot Found in Illinois. On July 21, 2 small partly-rotted summer squash fruits from a local victory garden were brought to the horticulture pathology laboratory. The fruits were almost completely covered with a greyish-brown mold which was identified tentatively as Choanephora cucurbitarum (B. & R.) Thaxter. This diagnosis was confirmed by Dr. Leland Shanor of the U. S. Bureau of Plant Industry, Soils, and Agricultural Engineering Emergency Plant Disease Prevention Project. According to Dr. Shanor, this is the first report of Choanephora squash rot from the North Central States outside of Ohio. (M. B. Linn, University of Illinois).

Choanephora Rot in New Hampshire. Choanephora fruit rot of squash was found on a very few fruits in one field at Exeter. (Robert C. Cassell, Emergency Plant Disease Prevention Project. August 21)

ONION SMUT IN COLORADO: During the week ending August 14, onion smut (Urocystis cepulae) was found near Greeley, Weld County, in the northern part of the State. This is the first time onion smut has been recorded in Colorado. About 10% of the plants were infected. (E. W. Bodine, Emergency Plant Disease Prevention Project).

BRIEF NOTES ON PLANT DISEASES

DEFICIENCY DISEASES AND EARLY BLIGHT OF POTATO IN NEW HAMPSHIRE: As a result of the heavy rains in June, potato vines showed nitrogen and magnesium deficiencies. Early blight was abundant, large fields showing from 10 to 50% defoliation. (M. C. Richards, University of New Hampshire. August 18)

BACTERIAL RING ROT OF POTATO IN PENNSYLVANIA: Field symptoms of potato ring rot [Corynebacterium sepedonicum] have now started showing and losses are reported from Potter, Lycoming, Clinton, Butler, and Sullivan Counties. Losses so far have been confined to fields from seed labelled "selected" or just "seed" and have not appeared in fields grown from certified stock. (O. D. Burke, Pennsylvania State College. August 17)

POTATO DISEASES IN IOWA: (See also under late blight). Practically all tubers examined in muckland fields in the commercial potato regions of northern Iowa, visited August 16, 17, and 18, showed potato scab lesions. Fields of so-called "upland" potatoes were, in general, more advanced in maturity. In fields in which the vines were not already dead, practically all plants showed a combination of tip burn, early blight, and leaf hopper damage. A trace of Fusarium wilt and of blackleg was also noted. (T. W. Bretz, Emergency Plant Disease Prevention Project. August 22)

BEAN DISEASES IN NEW HAMPSHIRE: Anthracnose and halo blight were found in most of the bean fields visited. Considerable spotting of the pods by anthracnose had occurred. The disease seemed to be more prevalent in home gardens than in commercial fields grown for canning. Sclerotinia rot (S. sclerotiorum) was found on pods and stems of string beans at Colebrook and at Lancaster. (M. C. Richards, University of New Hampshire. August 18)

"FALLING-OVER" OF ONIONS IN MINNESOTA: At Moorhead, part of a large field of onions was affected with an injury to the shoot resulting in the falling over of the leaves at a point approximately one inch above the bulb. This injury was most pronounced in areas most liable to flooding and may have been associated with excessive moisture. (Ian W. Tervet, Emergency Plant Disease Prevention Project. August 11)

UNDETERMINED "NECK ROT" OF ONIONS IN IOWA: On August 16, 17, and 18, a tour was made of the commercial potato and onion regions of northern Iowa. Fields in Hancock, Cerro Gordo, Winnebago, Worth, Emmett, Clay, Buena Vista, and Pocohontas Counties were visited.

Onions examined in the muckland areas showed the prevalence of a condition called "neck rot", the exact nature of which is not known. An estimated 10 to 15% of the onions in the field were so affected. Examination of affected onions revealed that the inner leaves in the neck of the bulb were soft and watery, as though the tissues had been

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bruised. In general, evidence of decay was lacking, although in perhaps 1% of the onions examined, discoloration indicative of decay extended down into the bulb.

A trace of onion smut was also observed. (T. W. Bretz, Emergency Plant Disease Prevention Project. August 22)

CORN AND SORGHUM DISEASES IN MISSISSIPPI: Drought has injured the corn crop severely in the areas visited. The diseases found were a trace of smut (Ustilago maydis), Physoderma leaf spot (Physoderma zeae-maydis), and a leaf spot due to Helminthosporium sp.

One field of sorghum was examined near Woodville. Anthracnose (Colletotrichum graminicolum) was found on all leaves; also a small amount of zonate leaf spot (Gloeocercospora sorghi) was present. (L. H. Person, Emergency Plant Disease Prevention Project. August 15 to 21)

DISEASES OF CORN IN NORTHEASTERN KANSAS: Fourteen corn fields were inspected in 9 northeastern counties. Corn smut is common and rust (Puccinia sorghi) is present in some fields in small amounts. A bacterial leaf spot was collected in 2 localities. The symptoms on the leaves are similar to those described for Bacterium holci Kendrick [= Pseudomonas syringae] on corn. The organism that has been found associated with the spots is similar to Phytomonas dissolvens Rosen. No bacterial wilt was observed. In some areas drought effects are becoming evident, with firing occurring along the south side or in exposed parts of the field. (Stuart M. Pady, Emergency Plant Disease Prevention Project. September 1).